Quiz 3

Instructions: Legibly complete each of the following on lined paper and submit on Gradescope. Collaboration and outside help (in any form) are forbidden.

1. Consider the matrix $M = \begin{bmatrix} x & 2 & 3 \\ -x & -3 & 2 \\ x & -x & 8 \end{bmatrix}$, where x is an arbitrary (i.e. variable!) real number.

   (a) Compute $\det(M)$.

   (b) For which values of x are the rows of M linearly dependent?